Strategic Program Objectives : Develop a highly integrated Amiga chip set to allow lower system cost in A300 class product (16 bit) with AA color, 1.4M floppy and MIDI capable serial port. Absolute hardware compatibility with ECS required in compatible modes. Significant reduction of PCB chip insertions required to limit capital expenditures on additional PCB equipment. Development to utilize CAD methodology which allows efficient re-usability of designs for other product targets..

Priority of objectives:

First - Lowest cost over 3 year life (may be higher initially)
Second - Two chip solution (reduce PCB factory capital requirements)
Third - Fast design cycle/production availibility
Fourth - Ehnanced functionality
Fifth - Design re-usability

Notes: Objectives 2 & 3 are complementary
Objectives 3 & 4 are competing
Objectives 3 & 5 are competing
Objectives 1 & 2 may be competing

Tactical Program Plan: Partition current Amiga chips, A300 Gayle and two 8520 chips into 2 144 PQFP chips. Tentative partition is Lisa/8520's and Agnus/Paula/Gayle to fit pin constraints and balance silicon area. (Possible alternate - 3 Amiga chips together and Gayle/8520 together as ASIC). Final definition required for color palette width/depth. Target 1.0u (drawn gate), triple metal process to allow cost effective use synthesized standard cells. Preliminary CAD plan is Neted capture, LSIM simulation, Autologic synthesis, Construct netlist driven layout and Compose three-layer routing/route annotation, Dracula verification/final LPE. NP will be used to link tools.

Chips : 1210 Agnus/Paula/Gayle/glue -
0.85u CMOS, structured custom, ~70K xistors, pad limited,
$12.50 (1992), $9.00 (1995)
1211 Lisa/CIA's
0.85u CMOS, structured custom, ~110L xistors, pad limited,
$12.50 (1992), $9.00 (1995)

Key Features -
16 bit memory interface
2x CPU bandwidth
2x bandwidth - video only (double CAS)
8 bit planes 640/15 Khz scan
4 bit planes 640/31 Khz scan
programmable scan rates
32 bit sprites (AA has 64)
256 18 bit color + transparency (AA has 24 bit color)
6 bit HAM
AA hardware scan doubling
1.4Mb MFM floppy + current (needs addt'l bandwidth)

Target cost : High volume $20 (1M/year)

Current Status : In definition